

## **REMARKS**

Claims 1, 2, and 6-12 are pending in the application, claims 3-5 and 13-32 having been withdrawn from consideration as being directed to unelected inventions. The Examiner objected to the form of dependent claims 7-8 under 37 CFR 1.75(c), and rejected claims 1, 9, and 11-12 under 35 U.S.C. §102(b). In addition, the Examiner rejected claims 2, 6-8, and 10 under 35 U.S.C. §103(a). Applicant has canceled claim 6 and amended claims 1 and 7-8, and has added new claims 33-40. Applicant notes that new claim 34 finds support in the specification on page 54, last paragraph, and page 55, first full paragraph. No new matter has been introduced.

### **37 CFR 1.75(c) Objections**

The Examiner objected to claims 7-8 under 37 CFR 1.75(c) for failing to further limit the subject matter of a previous claim. Specifically, the Examiner alleged that claim 6 did not provide a sufficient antecedent basis for the a-Si:C:O layer of claim 7 or the a-Si:O:F layer of claim 8, alleging that claim 6 did not specify which layer. Applicant notes that claim 6 has been canceled and its subject matter has been incorporated into claim 1. Applicant respectfully submits that the Examiner misunderstood the language of canceled claim 6. Canceled claim 6 is directed to the second insulating layer of claim 1, with the additional limitation that the second insulating layer can be formed from either a-Si:C:O or from a-Si:O:F. Claim 7 is directed to the case where the second insulating layer is formed from a-Si:C:O layer, and claim 8 is directed to the case where the second insulating layer is formed from a-Si:O:F. The Examiner is directed to the specification, page 15, paragraph beginning at line 11, for explanation. Thus, Applicant urges that canceled claim 6 (now claim 1)

provides sufficient antecedent basis for the a-Si:C:O layer of claim 7 and the a-Si:O:F of claim 8. Reconsideration and withdraw of the objection are respectfully requested.

### **Section 102 Rejections**

The Examiner rejected claims 1, 9, and 11-12 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,920,084 (Gu, *et al.*).

Applicant respectfully traverses this rejection.

In order for a reference to anticipate under section 102, it must claim or disclose every limitation of the claimed invention, either explicitly or under the principle of inherency.

Claim 1 has been amended to incorporate the limitations of canceled claim 6, which claims that the second insulating layer is formed from either a-Si:C:O or a-Si:O:F. Since this limitation is neither disclosed nor claimed in Gu, Gu does not anticipate Applicant's amended claim 1. Thus, Applicant's amended claim 1 claims subject matter that is patentable under section 102. Reconsideration and withdraw of this rejection are respectfully requested.

Claims 9 and 11-12 depend from claim 1, and are thus patentable for at least the same reasons as claim 1. Reconsideration and withdraw of these rejections are respectfully requested.

Applicant's new claim 33 incorporates the subject matter of Applicant's previous claims 1 and 2. Claim 2 is directed to the first insulating layer, with the additional limitations that it includes a top layer and a bottom layer, with the bottom layer having dielectric constant about 4 or less, and the top layer being a silicon nitride layer. Since these

limitations are neither disclosed nor claimed in Gu, Gu does not anticipate Applicant's new claim 33. Thus, Applicant's new claim 3, along with new claims 34-40 that depend upon claim 33, claim subject matter that is patentable under section 102.

### **Section 103 Rejections**

The Examiner rejected claims 2 and 6-8 under 35 U.S.C. §103(a) as being obvious over Gu in view of U.S. Patent No. 6,362,028 (Chen, *et al.*).

Applicant respectfully traverses this rejection.

Applicant urges that the Examiner has failed to make out a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the combination of prior art references must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure.

With regard to claim 2, the Examiner concedes that Gu fails to disclose a bottom dielectric layer for the first insulating layer, but then alleges that Chen discloses a TFT substrate having a first insulating layer that includes a top layer made of silicon nitride and a bottom layer having dielectric constant about 4 or less. However, Chen only discloses a gate insulating layer with a top layer made of either silicon oxide or silicon nitride and a bottom layer made of oxidation layer such as a high density TaOx. The oxidation layer such as a

high density TaOx is not a low dielectric material having dielectric constant about 4 or less, as claimed in Applicant's claim 2. Thus, the combination of Gu and Chen fails to teach or suggest all the claim limitations of Applicant's claim 2. Therefore, Applicant urges that Applicant's claim 2 is not *prima facie* obvious in view of Gu and Chen. Reconsideration and withdraw of this rejection are respectfully requested.

Applicant's new claim 33 incorporates the limitations of claims 1 and 2. For the reasons stated in the preceding paragraph, Applicant urges that new claim 33 defines patentable subject matter under section 103.

With regard to claim 6, the Examiner concedes that Gu fails to disclose a second insulating layer formed from either a-Si:C:O or a-Si:O:F, but then alleges that the use of these materials is disclosed in Chen.

Applicant urges that there is no basis for this allegation.

Chen discloses, *inter alia*, a thin film transistor that includes a substantially transparent glass panel, a plurality of gate buslines on the panel, a gate insulation layer overlying the gate buslines, an n<sup>+</sup> doped amorphous silicon layer on the gate insulation layer, source/drain metals formed of a metal on the n<sup>+</sup> doped amorphous silicon layer with an interface thereinbetween, the interface being substantially without chemical contaminants and native oxide thus providing improved contact resistant between the S/D metal and the n<sup>+</sup> doped amorphous silicon, a passivation layer overlying and insulating the source/drain metal, and an electrode layer overlying the passivation layer. Although an n<sup>+</sup> doped amorphous silicon layer is disclosed, there is no disclosure of either a-Si:C:O layer or a-Si:O:F layer, as claimed in Applicant's canceled claim 6. Chen's n<sup>+</sup> doped amorphous silicon layer is a

different material from Applicant's a-Si:C:O and a-Si:O:F. Thus, the combination of Gu and Chen fails to teach or suggest all the claim limitations of Applicant's canceled claim 6, that the second insulating layer is formed from either a-Si:C:O or a-Si:O:F. Applicant's amended claim 1 now incorporates the limitations of canceled claim 6. Therefore, Applicant urges that Applicant's amended claim 1 is not *prima facie* obvious in view of Gu and Chen. Reconsideration and withdraw of this rejection are respectfully requested.

Claims 7-8 depend from amended claim 1, and are thus patentable for at least the same reasons as amended claim 1. Reconsideration and withdraw of these rejections are respectfully requested.

The Examiner rejected claim 10 under 35 U.S.C. § 103(a) as being obvious over Gu in view of U.S. Patent No. 5,671,027 (Sasano, *et al.*).

Claim 10 depends from claim 1, and is thus patentable for at least the same reasons as claim 1. Reconsideration and withdraw of this rejection is respectfully requested.

**CONCLUSION**

Applicant urges that claims 1, 2 and 6-12, as amended, and new claims 33-40 are in condition for allowance for at least the reasons stated. Early and favorable action on this case is respectfully requested.

Respectfully submitted,

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